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EXAMINER	
GU, YU	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/569,205	HIRSCH ET AL.	
	Examiner	Art Unit	
	YU (Andy) GU	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/05/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment, filed on 3/05/2009, has been entered and carefully considered. Claims 1-20 have been amended. Accordingly, claims 1-20 are pending.

2. The Examiner has withdrawn objections to the drawing for lack of text labeling.

3. In light of Applicant's amendment, objection to the abstract is withdrawn.

4. In light of Applicant's amendment, objection to claim 5 under minor informalities is withdrawn.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. **Claims 1-20** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 20070087723 Zhang (hereinafter Zhang) in view of US 20020169009 A1 Robert Reiner (hereinafter Reiner). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Regarding amended claim 1 of the present application, in addition to reciting all the limitations of claim 1 of Zhang, claim 1 of the present application recites the limitation "*wherein the incoming signal comprises a data frame with a preamble and a payload within a single frequency band, and the detector is configured to detect the sequence within the preamble of the data frame*". However, receiving preamble and a payload within a single frequency band (e.g. downlink frequency band) is notoriously well known in the art, such fact is evidenced by Reiner (see at least paragraph [0020] and [0027]-[0029], where as a specific example, Reiner discloses that the pulse sequence resides in the frequency range from 869.4 MHz to 869.65 MHz, and the basic information resides in the frequency range from 869.7 to 870.0 MHz, thus the two non-overlapping frequency ranges belong to the single (i.e. downlink) frequency band ranging from 869.4 MHz to 870.0 MHz). It would have been obvious to one of ordinary skill in the art at the time of the invention modify to modify Zhang by transmitting the preamble and payload within a single frequency band for the purpose of efficiently facilitating transmission. Claims 7 and 14 are rejected on the same ground (s) as claim 1.

Claims 2-6, 8-13 and 15-20 contain patentably indistinguishable limitations as that of the corresponding claims in Zhang.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1-20** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **Claim 1** recites the limitation "*a preamble and a payload within a single frequency band*". However, the Examiner could not find, in the original disclosure, any support or description as to the frequency location of the preamble and the payload being within the same frequency band. Therefore, the Examiner holds that claim 1 contains new matter. Claims 7 and 14 are rejected on the same ground (s). Claims 2-6, 8-13 and 15-20 are rejected due to their dependency.

Claim Rejections - 35 USC § 102

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. **Claims 1-2, 7-9** and **14-16** are rejected under 35 U.S.C. 102(e) as being anticipated by Reiner.

Regarding **claim 1** (currently amended), Reiner discloses *a RF stage* (see at least Figure 1 and paragraph [0005], where Reiner discloses item 1-5 for radio frequency communication, therefore RF stage) *in a wireless station comprising*:

- *a detector* (see at least Figure 1 item 3) *for detecting a sequence in an incoming signal received by the wireless station and for generating an activation signal* (i.e. wake-up information generated by obtained by the detector) *in response to detecting the sequence* (i.e. pulse sequence) *in the incoming signal* (see at least paragraph [0042]-[0043] and [0048]);
- *Wherein the incoming signal comprises a data frame with a preamble* (e.g. pulse sequence) *and a payload* (e.g. basic information) *within a single frequency band, and the detector is configured to detect the sequence within the preamble of the data frame* (see at least paragraph [0020] and [0027]-[0029], where as a specific example, Reiner discloses that the pulse sequence resides in the frequency range from 869.4 MHz to 869.65 MHz, and the basic information resides in the frequency range from 869.7 to 870.0 MHz, thus the two non-overlapping frequency ranges belong to the single (i.e. downlink) frequency band ranging from 869.4 MHz to 870.0 MHz)

Regarding **claim 2** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 1**. Reiner further discloses:

- *Wherein the detector is further configured to transmit the activation signal to a baseband stage* (see at least Figure 1 item 5, which comes after a filter unit (e.g. low pass filter), therefore baseband stage) *in the wireless*

station to transition the baseband stage from a low power (standby mode and operating mode 1) *state to an active* (operating mode 2) *power state in response to receiving the activation signal* (see at least paragraph [0013] and [0047]-[0048]).

Regarding **claim 7** (currently amended), Reiner discloses a *wireless station, comprising:*

- *a baseband stage* (see at least Figure 1 item 5) *in a low power state when a signal is not received by the wireless station;*
- *and a RF stage* (see at least Figure 1 item 1-4) *for detecting a sequence* (i.e. pulse sequence) *in a signal received by the wireless station and for generating an activation* (see at least paragraph [0042]-[0043]) *signal in response to detecting the sequence wherein the signal comprises a data frame with a preamble* (e.g. pulse sequence) *and a payload* (e.g. basic information) *within a single frequency band, and the RF stage is configured to detect the sequence within the preamble of the data frame*(see at least paragraph [0020] and [0027]-[0029], where as a specific example, Reiner discloses that the pulse sequence resides in the frequency range from 869.4 MHz to 869.65 MHz, and the basic information resides in the frequency range from 869.7 to 870.0 MHz, thus the two non-overlapping frequency ranges belong to the single frequency band ranging from 869.4 MHz to 870.0 MHz);
- *wherein the activation signal is transmitted to the baseband stage to cause the baseband stage to transition from the low power state* (i.e.

standby mode and operating mode 1)*to an active* (i.e. operating mode 2) *power state* (see at least paragraph [0042] and [0048])

Regarding **claim 8** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 7**. Reiner further discloses *that wherein the RF stage comprises a receiver* (see at least Figure 1 item 1-4) *for detecting the sequence in the signal received by the wireless station and for generating the activation signal in response to detecting the sequence* (see at least paragraph [0013] and [0047]-[0048]).

Regarding **claim 9** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 7** and **8**. Reiner further discloses that *wherein* the *receiver comprises a detector* (see at least Figure 1 item 3) *for detecting the sequence in the signal and for generating the activation signal* (i.e. wake-up information) *in response to detecting the sequence* (see at least paragraph [0042]-[0043] and [0048]).

Regarding **claim 14** (currently amended), Reiner discloses a *method for detecting a sequence in a signal received by a wireless station, comprising the steps of:*

- *detecting the sequence in a RF stage* (see at least Figure 1 item 1-4)*in the wireless station;*
- *and generating an activation signal in response to detecting the sequence* (see at least paragraph [0042]-[0043] and [0048]);
- *wherein the signal comprises a data frame with a preamble and a payload within a single frequency band, and the RF stage is configured to detect*

the sequence within the preamble of the data frame(see at least paragraph [0020] and [0027]-[0029], where as a specific example, Reiner discloses that the pulse sequence resides in the frequency range from 869.4 MHz to 869.65 MHz, and the basic information resides in the frequency range from 869.7 to 870.0 MHz, thus the two non-overlapping frequency ranges belong to the single frequency band ranging from 869.4 MHz to 870.0 MHz).

Regarding **claim 15** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 14.** Reiner further discloses the *step of transmitting the activation signal to a baseband stage* (see at least Figure 1 item 5) *in the wireless station to cause the baseband stage to transition from a low power state* (i.e. standby mode and operating mode 1) *to an active power state* (operating mode 2) (see at least paragraph [0042] and [0048]).

Regarding **claim 16** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 14.** Reiner further discloses *the step of detecting the sequence in a RF stage in the wireless station comprises detecting the sequence in a detector* (see at least Figure 1 item 3) *in the RF stage in the wireless station* (see at least paragraph [0042]-[0043] and [0048]).

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. **Claims 3, 10** and **17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner in view of US 3623097 A Raymond Femenias

(hereinafter Femenias), and US 20030112856 A1 Challa et al. (hereinafter Challa).

Regarding **claim 3** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 1**. Reiner further discloses that the detector comprises: a filter unit (see at least Figure 1 item 2). Reiner is however silent as to the limitation that the detector *comprises: a delay for inserting a predetermined time delay into the incoming signal and a correlator for receiving the incoming signal and the delayed incoming signal and for generating a correlated signal.* However, in a related field of wireless communication, Femenias discloses a cross-correlation receiver (see at least Femenias Figure 1) comprising a delay (i.e. Femenias Figure 1 item 66) for inducing a predetermined time-delay to incoming signal, and a correlator (i.e. Femenias Figure 1 item 60) that outputs a correlated signal (see at least Femenias column 3 lines 66-75, column 4 lines 23-29, 51-54). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Femenias because Femenias teaches that "modern communications theories establish that the cross-correlation receiver, being equivalent to the matched receiver, offers the best possible signal to noise ratio improvement"(see at least Femenias column 1 lines 20-25).

Reiner and Femenias do not disclose *a peak **detector** for receiving the correlated signal and for detecting the sequence, wherein the peak detector generates the activation signal in response to detecting the sequence.* However, coupling a peak detector to a correlator is well known in the art of signal process circuitry, as evidenced by Challa (see at least Challa paragraph [0031], wherein

Challa teaches using a peak detector after a correlator stage to detected a PN sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Femenias in view of Challa to couple a peak detector to the output of the correlator (therefore receiving the correlated signal) in order to identify the peak correlation, which indicates the presence of desired signal (e.g. the wake-up information, therefore generating activation signal in response to detecting the sequence).

Regarding **claim 10** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 7, 8** and **9**. Reiner further discloses a filter unit (see at least Figure 1 item 2). Reiner is however silent as to the limitation that the detector *comprises: a delay for inserting a predetermined time delay into the incoming signal and a correlator for receiving the incoming signal and the delayed incoming signal and for generating a correlated signal.* However, in a related field of wireless communication, Femenias discloses a cross-correlation receiver (see at least Femenias Figure 1) comprising a delay (i.e. Femenias Figure 1 item 66) for inducing a predetermined time-delay to incoming signal, and a correlator (i.e. Femenias Figure 1 item 60) that outputs a correlated signal (see at least Femenias column 3 lines 66-75, column 4 lines 23-29, 51-54). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Femenias because Femenias teaches that "modern communications theories establish that the cross-correlation receiver, being equivalent to the matched receiver, offers the best possible signal to noise ratio improvement"(see at least Femenias column 1 lines 20-25).

Reiner and Femenias do not disclose *a peak detector for receiving the correlated signal and for detecting the sequence, wherein the peak detector generates the activation signal in response to detecting the sequence.* However, coupling a peak detector to a correlator is well known in the art of signal process circuitry, as evidenced by Challa (see at least Challa paragraph [0031], wherein Challa teaches using a peak detector after a correlator stage to detected a PN sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Femenias in view of Challa to couple a peak detector to the output of the correlator (therefore receiving the correlated signal) in order to identify the peak correlation, which indicates the presence of desired signal (e.g. the wake-up information, therefore generating activation signal in response to detecting the sequence).

Regarding to **claim 17** (currently amended)**,** Reiner discloses the limitations as shown in the rejection of **claim 14** and **16.** Reiner further discloses a filter unit (see at least Figure 1 item 2). Reiner is however silent as to the limitation *that detecting the sequence in a detector in the RF stage in the wireless station comprises: inputting the signal into a delay for inserting a predetermined time delay into the signal and inputting the signal and the delayed signal into a correlator for generating a correlated signal.* However, in a related field of wireless communication, Femenias discloses a cross-correlation receiver (see at least Femenias Figure 1) comprising a delay (i.e. Femenias Figure 1 item 66) for inducing a predetermined time-delay to incoming signal, and a correlator (i.e. Femenias Figure 1 item 60) that outputs a correlated signal (see at least

Femenias column 3 lines 66-75, column 4 lines 23-29, 51-54), and the correlator takes the delay signal and received signal as input. It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Femenias because Femenias teaches that "modern communications theories establish that the cross-correlation receiver, being equivalent to the matched receiver, offers the best possible signal to noise ratio improvement"(see at least Femenias column 1 lines 20-25).

Reiner and Femenias do not disclose *inputting the correlated signal into a peak detector for detecting the sequence.* However, coupling a peak detector to a correlator is well known in the art of signal process circuitry, as evidenced by Challa (see at least Challa paragraph [0031], wherein Challa teaches using a peak detector after a correlator stage to detected a PN sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Femenias in view of Challa to couple a peak detector to the output of the correlator (therefore inputting the correlated signal into the peak detector) in order to identify the peak correlation, which indicates the presence of desired signal.

12. **Claims 4, 11** and **18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner in view of US 4897659 A Donald Mellon (hereinafter Mellon) and US 20010055275 A1 Herrmann et al. (hereinafter Herrmann). Regarding **claim 4** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 1**. Reiner further discloses that the detector comprises: a filter unit (see at least Figure 1 item 2). Reiner is however silent as

to the limitation that the detector *comprises: a matched filter having coefficients defined by the sequence and for generating a match signal when the sequence is included in the incoming signal.* However, in a related field of wireless communication, Mellon discloses (see at least Mellon column 5 lines 65-68 and column 6 line 1-3)that a matched filter has an impulse response equal to the time inverse of the impulse response of the desired received (i.e. the sequence) signal (therefore, a matched filter has coefficients defined by the sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Mellon to include a matched filter because a matched filter provides the maximum achievable signal-to-nose improvement on the received signal, as discussed by Mellon (see at least Mellon column 6 line 1-3).

Reiner and Mellon do not disclose a *peak detector for receiving the match signal from the matched filter and for generating the activation signal in response to receiving the match signal from the matched filter.* However, coupling a peak detector to a matched filter is well known in the art of signal process circuitry, as evidenced by Herrmann (see at least Herrmann paragraph [0029], wherein Herrmann teaches using a peak detector after a matched filter stage to detected a transmitted sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Mellon in view of Herrmann to couple a peak detector to the output of the matcher filter (therefore receiving the matched signal) in order to identify the peak correlation, which indicates the presence of desired signal (e.g. the wake-up information, therefore generating activation signal in response to receiving the sequence).

Regarding **claim 11** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 7, 8** and **9**. Reiner further discloses that the detector comprises: a filter unit (see at least Figure 1 item 2). Reiner is however silent as to the limitation that the detector *comprises: a matched filter having coefficients defined by the sequence and for generating a match signal when the sequence is included in the incoming signal.* However, in a related field of wireless communication, Mellon discloses (see at least Mellon column 5 lines 65-68 and column 6 line 1-3) that a matched filter has an impulse response equal to the time inverse of the impulse response of the desired received (i.e. the sequence) signal (therefore, a matched filter has coefficients defined by the sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Mellon to include a matched filter because a matched filter provides the maximum achievable signal-to-nose improvement on the received signal, as discussed by Mellon (see at least Mellon column 6 line 1-3). Reiner and Mellon do not disclose a *peak detector for receiving the match signal from the matched filter and for generating the activation signal in response to receiving the match signal from the matched filter.* However, coupling a peak detector to a matched filter is well known in the art of signal process circuitry, as evidenced by Herrmann (see at least Herrmann paragraph [0029], wherein Herrmann teaches using a peak detector after a matched filter stage to detected a transmitted sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Mellon in view of Herrmann to couple a peak detector to the output of the matcher filter (therefore receiving the matched

signal) in order to identify the peak correlation, which indicates the presence of desired signal (e.g. the wake-up information, therefore generating activation signal in response to receiving the sequence).

Regarding **claim 18** (currently amended), Reiner discloses the limitations as shown in the rejection of **claim 14** and **16**. Reiner further discloses that the detector comprises: a filter unit (see at least Figure 1 item 2). Reiner is however silent as to the limitation *detecting the sequence in a detector in the RF stage in the wireless station comprises: inputting the signal into a matched filter having coefficients defined by the sequence and generating a match signal when the sequence is included in the signal.* However, in a related field of wireless communication, Mellon discloses (see at least Mellon column 5 lines 65-68 and column 6 line 1-3) that a matched filter has an impulse response equal to the time inverse of the impulse response of the desired received (i.e. the sequence) signal (therefore, a matched filter has coefficients defined by the sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Mellon to include a matched filter (therefore generating a match signal when the sequence is present in the signal) because a matched filter provides the maximum achievable signal-to-nose improvement on the received signal, as discussed by Mellon (see at least Mellon column 6 line 1-3).

Reiner and Mellon do not disclose *inputting the match signal into a peak detector to cause the peak detector to generate the activation signal in response to receiving the match signal from the matched filter.* However, coupling a peak detector to a matched filter is well known in the art of signal process circuitry, as

evidenced by Herrmann (see at least Herrmann paragraph [0029], wherein Herrmann teaches using a peak detector after a matched filter stage to detected a transmitted sequence). It would have been obvious to a person of ordinary skill in the art to modify Reiner and Mellon in view of Herrmann to couple a peak detector to the output of the matcher filter (therefore receiving the matched signal) in order to identify the peak correlation, which indicates the presence of desired signal (e.g. the wake-up information, therefore generating activation signal in response to receiving the matched signal).

13. **Claims 5,12** and **19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner in view of US 5818822 A Thomas et al. (hereinafter Thomas)

Regarding **claim 5** (currently amended), Reiner discloses the limitations a shown in the rejection of **claim 1**. Reiner further discloses that the incoming signal comprise a pulse sequence (see at least paragraph [0042]). Reiner does not specifically disclose that the sequence comprises a *Barker sequence*. However, in a related field of wireless communication, Thomas discloses using Barker sequence to modulate message (see at least Thomas column 7 lines 1-6). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Thomas because Thomas teaches "a Barker sequence has the property of producing a very market correlation peak when it is detected by a transversal filter having coefficient correspond to this sequence."

Regarding **claim 12** (currently amended)**,** Reiner discloses the limitations as shown in the rejection of **claim 7**. Reiner further discloses that the incoming

signal comprise a pulse sequence (see at least paragraph [0042]). Reiner does not specifically disclose that the sequence comprises a *Barker sequence*. However, in a related field of wireless communication, Thomas discloses using Barker sequence to modulate message (see at least Thomas column 7 lines 1-6). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Thomas because Thomas teaches "a Barker sequence has the property of producing a very market correlation peak when it is detected by a transversal filter having coefficient correspond to this sequence."

Regarding **claim 19 (**currently amended**),** Reiner discloses the limitations as shown in the rejection of **claim 14**. Reiner further discloses that the incoming signal comprise a pulse sequence (see at least paragraph [0042]). Reiner does not specifically disclose that the sequence comprises a *Barker sequence*. However, in a related field of wireless communication, Thomas discloses using Barker sequence to modulate message (see at least Thomas column 7 lines 1-6). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Thomas because Thomas teaches "a Barker sequence has the property of producing a very market correlation peak when it is detected by a transversal filter having coefficient correspond to this sequence."

14. **Claims 13** and **20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner in view of US 5732113 A Schmidl et al. (herein after Schmidl).

Regarding **claim 6 (**currently amended**),** Reiner discloses the limitations as shown in the rejection of **claim 1**. Reiner does not specifically disclose that the

sequence comprises *a sequence of OFDM symbols.* However, in a related art of wireless communication, Schmidl discloses the using of OFDM symbols to carry information (see at least Schmidl abstract). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Schmidl because Schmidl teaches that the transmission data via OFDM includes tolerance to multi-path delay spread and tolerance to frequency selective fading (see at least Schmidl column 5 lines 1-25).

Regarding **claim 13** (currently amended)**,** Reiner discloses the limitations as shown in the rejection of **claim 7**. Reiner does not specifically disclose that the sequence comprises *a sequence of OFDM symbols.* However, in a related art of wireless communication, Schmidl discloses the using of OFDM symbols to carry information (see at least Schmidl abstract). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Schmidl because Schmidl teaches that the transmission data via OFDM includes tolerance to multipath delay spread and tolerance to frequency selective fading (see at least Schmidl column 5 lines 1-25).

Regarding **claim 20** (currently amended)**,** Reiner discloses the limitations as shown in the rejection of **claim 14**. Reiner does not specifically disclose that the sequence comprises *a sequence of OFDM symbols.* However, in a related art of wireless communication, Schmidl discloses the using of OFDM symbols to carry information (see at least Schmidl abstract). It would have been obvious to a person of ordinary skill in the art to modify Reiner in view of Schmidl because Schmidl teaches that the transmission data via OFDM includes tolerance to

multipath delay spread and tolerance to frequency selective fading (see at least Schmidl column 5 lines 1-25).

Response to Arguments

15. Applicant's arguments with respect to claim 1, 7 and 14 have been considered but are moot in view of the new ground(s) of rejection. However, the Examiner hereby offers further explanation of the rejections made on claim 1, 7 and 14. Applicant submits that because the wake-up information (i.e. preamble) locates on a different frequency range than the basic information (payload), the wake-up information and the basic information does not belong to the same frequency band (see Applicant's remark page 12). The Examiner respectfully disagrees. The term "frequency band", as known in the art, refers to a group of frequencies (i.e. frequency channels with certain bandwidth and non-overlapping center frequencies) on the frequency spectrum. Therefore merely reciting "*within a single frequency band*" does not suggesting that the wake-up information and basic information locates on the same or overlapping frequency channels as implied by the Applicant's remarks. Furthermore, a frequency band can be further divided into sub-bands. Therefore, Reiner discloses a single frequency band (e.g. 869.4 MHz to 870.0 MHz) with two sub bands (e.g. 869.4 MHz to 869.65 MHz and 869.7 to 870.0).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to YU (Andy) GU whose telephone number is (571)270-7233. The examiner can normally be reached on Mon-Thur 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on 5712727922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/YU (Andy) GU/
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617